ASSIGNMENT 11

Textbook Assignment: "Magnetic Disk Storage," chapter 10, pages 10-1 through 10-21.

11-1. Magnetic disks are generally used as which of the following types of storage?

1. Main memory
2. Secondary storage
3. Tertiary storage

11-2. The original fixed disk had which of the following maximum capacities?

1. 5 megabytes
2. 10 megabytes
3. 20 megabytes
4. 50 megabytes

11-3. The first floppy disks had a diameter of (a) what number of inches and a maximum capacity of(b) how many kilobytes?

1. (a) 5 (b) 180
2. (a) 5 (b) 360
3. (a) 8 (b) 180
4. (a) 8 (b) 360

11-4. The top and bottom surfaces of a removable disk pack are usually used for what purpose?

1. Data storage
2. Protection
3. Servo data
4. Indexing

11-5. Fixed disks have which of the following characteristics?

1. They are small sealed units with one or more platters
2. They are easily removed from the computer
3. They are only used with mainframe computers
4. They are not broken

11-6. The 5.25-inch floppy disk is available with which of the following densities?

1. 360K only
2. 720K only
3. 1.2M only
4. 360K, 720K, and 1.2M

11-7. The 3.5-inch floppy disk is available with which of the following densities?

1. 360K only
2. 720K only
3. 1.44M only
4. 720K and 1.44M

11-8. Formatting a disk performs which of the following operations?

1. Writes tracks only
2. Writes sectors only
3. Writes cylinders only
4. Writes tracks and sectors

11-9. Concentric rings used to store data on disk are called

1. bytes
2. tracks
3. records
4. cylinders

11-10. Track 00 is physically located on a disk's recording surface in which of the following places?

1. Top track
2. Bottom track
3. Innermost track
4. Outermost track

11-11. A cylinder address number is comprised of which of the following numbers?

1. Cylinder number only
2. Track number only
3. Sector number only
4. Cylinder number, sector number, and head number

11-12. In a personal computer, which of the following data management areas is NOT created by the DOS[1] format program?

1. Root directory
2. Subdirectory
3. Disk boot sector
4. File allocation table

11-13. A new fixed disk installed in a personal computer needs to have what operation(s), if any, run before it is ready to store data?

1. Format only
2. High-level format only
3. Format and high-level format
4. None; new disks are ready to run

11-14. In a personal computer using DOS version 5, the root directory of a 40 megabyte fixed disk can have what maximum number of entries?

1. 128
2. 256
3. 512
4. 640

11-15. The DOS directory system is a file system that enables DOS to manage files.

1. True
2. False

11-16. In DOS, the maximum number of characters in a file name is

1. 8
2. 9
3. 10
4. 11

11-17. In DOS, the maximum number of characters in a file extension is

1. one
2. two
3. three
4. four

11-18. Using DOS on a personal computer, a total of how many bytes comprise a directory entry?

1. 32
2. 48
3. 64
4. 80

[1] References to DOS refer to Microsoft® Disk Operating Systems (MS-DOS®).

11-19. Which of the following parameters is NOT part of the DOS file allocation table (FAT) entry?

1. A bad cluster code written during formatting
2. A DOS cluster available for storage
3. The file name stored in that DOS cluster
4. An end of the file code

11-20. On a 5.25-inch floppy disk, which of the following materials is used as the magnetic coating?

1. Chromium dioxide only
2. Iron oxide only
3. Cobalt only
4. Iron oxide or cobalt, depending on the density of the disk

11-21. The index hole on a 5.25-inch soft sectored floppy disk is used to indicate the

1. start of sector 1 of each track
2. start of track 1
3. start of each sector
4. end of the data storage area of the disk

11-22. To protect a 5.25-inch floppy disk from being written on, which of the following actions should you take?

1. Ensure the write enable notch is not obstructed
2. Cover the write enable notch with a piece of tape
3. Format the disk as read only
4. Disable the write circuitry on the disk drive

11-23. To allow for greater densities on a 3.5-inch floppy disk, the plastic cover provides what function, if any?

1. It stabilizes the disk as the disk spins
2. It makes it harder to damage the disk
3. It allows for greater disk speeds
4. None; it serves no function in increasing disk density

11-24. When handling a 3.5-inch floppy disk, what feature, if any, eliminates the need for you to keep the disk in a disk jacket?

1. The rigid plastic case
2. The spring-loaded metal shutter
3. The exposed media access hole
4. None; you should always store a 3.5-inch disk in a jacket

11-25. What action, if any, is necessary to write data on a 3.5-inch disk?

1. Ensure the write enable slide is positioned so you can see a hole in the disk case
2. Ensure the write enable slide is positioned so that no hole is visible through the disk case
3. Ensure the disk has not been formatted
4. None; no action is necessary to write on a 3.5-inch disk

11-26. The presence of a media indicator hole in a 3.5-inch disk case indicates what about the disk?

1. It has been properly inserted in the drive
2. It can be formatted as a 720K disk only
3. It can be formatted as a 1.44M disk
4. It has been preformatted

11-27. The drive motor in a 5.25-inch, 1.2M disk drive spins at which of the following speeds?

1. 200 rpm
2. 260 rpm
3. 300 rpm
4. 360 rpm

11-28. The drive motor on most half-height floppy disk drives is which of the following types of motors?

1. Gear box drive
2. Direct drive
3. Servo drive
4. Belt-drive

11-29. To adjust the speed of some older fill-height, belt-driven floppy disk drives, which of the following actions should be performed?

1. Replace the drive belt only
2. Observe the data on the floppy disk with an oscilloscope and adjust for maximum signal
3. Observe the drive speed frequency with an oscilloscope and adjust for proper speed
4. Observe the strobo-disk under a fluorescent light and adjust the speed until the strobo-disk spokes appear to be stationary

11-30. Which of the following is NOT a function of the drive electronics circuit board?

1. To control the electromechanical parts of the disk drive
2. To control the operation of the read/write heads
3. To interface the disk drive to the computer
4. To interface the disk drive to the disk controller

11-31. A 4-pin, in-line connector on the drive electronics circuit board of a floppy disk drive serves which of the following functions?

1. To provide power to the drive
2. To provide control signals to the drive
3. To transfer serial data from the heads to the drive controller
4. To transfer serial data from the disk controller to the write head

11-32. The head actuator assembly in a floppy disk drive has what purpose?

1. To retract the heads so the disk can be removed from the drive only
2. To move the heads to the proper position on the disk
3. To enable the write heads
4. To enable the read heads

11-33. The two read/write heads in a floppy disk drive move independently of one another.

1. True
2. False

11-34. Which of the following is a description of the construction of the read/write heads in a floppy disk drive?

1. They are made of a hard ferrous material with electromagnetic coils for reading and writing
2. They are made of a soft ferrous material with electromagnetic coils for reading and writing
3. They are made of plastic with electromagnetic coils for reading and writing
4. They are made of a hard ferrous material only and do not need any coils

11-35. The write head is centered between two erase heads for which of the following reasons?

1. To erase the previous data before new data is written
2. To cancel the write current when a read operation is performed
3. To ensure that data being written does not spill over to adjacent tracks
4. To erase the previous data after the new data is written

11-36. The number of tracks per inch that can be reliably written on a disk is called the

1. linear coercivity
2. longitudinal coercivity
3. linear density
4. longitudinal density

11-37. The number of bits per inch that can be reliably written on a track is called the

1. linear coercivity
2. longitudinal coercivity
3. linear density
4. longitudinal density

11-38. The strength of the magnetic field required to properly record data on a magnetic medium is referred to by which of the following terms?

1. Coercivity
2. Oersteds
3. Density
4. Ferrous

11-39. Oersteds are used to make what type of measurements?

1. Magnetic field strength
2. Permeability of a ferrous material
3. Magnetic density
4. Magnetic polarity

11-40. A 5.25-inch floppy disk that is labeled as DSDD has a maximum data capacity of

1. 180 kilobytes
2. 360 kilobytes
3. 720 kilobytes
4. 1.2 megabytes

11-41. The track width of a 3.5-inch floppy disk is

1. 0.l15 mm
2. 0.16 mm
3. 0.33 mm
4. 0.45 mm

11-42. Reading a 5.25-inch, 360K disk in a 1.2M disk drive will cause what problem, if any?

1. The disk drive will read the disk with massive read errors
2. The disk drive will be unable to read the disk at all
3. The 360K disk will not fit into a 1.2M disk drive
4. No problem; the disk drive will read the disk normally

11-43. Using a 1.2M, 5.25-inch drive to write data on a 5.25-inch, 360K disk that was originally created in a 360K disk drive will result in what problem, if any?

1. The 1.2M drive will not write on a 360K disk
2. The 360K disk will not fit into a 1.2M drive
3. The 1.2M drive will write a narrow track through the wider track on the 360K disk, which could result in read errors
4. None; no problem will be encountered

11-44. Formatting a 5.25-inch, 360K DSDD disk as a 1.2M HD disk will result in what problem, if any?

1. The disk will not format because the DOS format program will check the media indicator on the disk and not permit the operation
2. The disk will appear to format correctly, but will be unreliable because of the increased write current required for high density disks
3. The disk will appear to format correctly, but will be unreliable because of the decreased write current required for high density disks
4. None; no problem will be encountered

11-45. Formatting a 720K DSDD, 3.5-inch floppy disk as a 1.44M will result in what problem, if any?

1. The disk will not format because the DOS format program will check the media indicator on the disk and not permit the operation
2. The disk will appear to format correctly, but will be unreliable because of the increased write current required for high density disks
3. The disk will appear to format correctly, but will be unreliable because of the decreased write current required for high density disks
4. None; no problem will be encountered

11-46. A high-density disk can be used in a low-density drive with no problems.

1. True
2. False

11-47. The drive select jumper on a floppy disk drive's electronics card is used to select which of the following functions?

1. Drive type
2. Drive density
3. Drive address
4. Drive operating speed

11-48. When installing a floppy drive with a straight two-drive daisy chain cable, you should connect Drive A to (a) what connector and set the drive select jumper to (b) what drive?

1. (a) End (b) DS0
2. (a) End (b) DS1
3. (a) Middle (b) DS0
4. (a) Middle (b) DS1

11-49. The twist in a floppy disk cable was designed for which of the following reasons?

1. To ease floppy drive installation by setting all drives to DS1
2. To ease floppy drive installation by setting all drives to DS0
3. To ease floppy drive installation by setting drive A to DS0 and drive B to DS1
4. To confuse floppy drive installation

11-50. The twist in a floppy drive cable cross connects which of the following pins?

1. 10 through 16 only
2. 10 through 20
3. 20 through 26 only
4. 20 through 30

11-51. The terminating resistor on a floppy drive is used to supply the proper load to (a) what device and should be connected on the floppy disk at (b) what point on the cable?

1. (a) Computer (b) middle
2. (a) Computer (b) end
3. (a) Disk controller (b) middle
4. (a) Disk controller (b) end

11-52. The media sensor detects a hole for which of the following disks?

1. 5.25-inch, 360K disks
2. 5.25-inch, 1.2M disks
3. 3.5-inch, 720K disks
4. 3.5-inch, 1.44M disks

11-53. It is impossible to recover data on a disk that has been damaged.

1. True
2. False

11-54. Large magnetic disk memory sets are generally used with which of the following computers?

1. Mainframe computers
2. Minicomputers
3. Personal computers only
4. Microcomputers

11-55. The diameter of most magnetic disk packs is

1. 10 inches
2. 12 inches
3. 14 inches
4. 16 inches

11-56. The top and bottom platters of most disk packs are used for which of the following functions?

1. To store data
2. To provide position data
3. Both 1 and 2 above
4. To provide protection to the pack

11-57. The servo surface of a disk pack is used for which of the following functions?

1. To control the movement of the read/write heads
2. To maintain alignment of the read/write heads over the proper track
3. Both 1 and 2 above
4. To provide additional data storage area

11-58. When the summing of dipole bits on the disk servo surface is equal to zero volts, which of the following conditions exist?

1. The heads are on an odd numbered track only
2. The heads are on an even numbered track only
3. The heads are between tracks
4. The heads are centered on a track

11-59. On a typical disk memory set's operator panel, which of the following conditions is NOT indicated by the READY indicator?

1. The disk drive address
2. The disk is up to operating speed
3. The heads are properly loaded
4. No-fault conditions are present

11-60. On a disk memory set's status/maintenance panel, a fault code of 5 indicates what fault condition?

1. Voltage fault
2. Seek error
3. Multiple heads selected fault
4. No heads selected fault

11-61. The FORMAT WRITE PROTECT switch on a disk memory unit's status panel protects the disk from being inadvertently formatted by which of the following format commands?

1. Commands from the computer only
2. Commands from the status/maintenance panel only
3. Commands from the computer and the status/maintenance panel

11-62. The functions performed by the disk memory set's controller microprocessor are governed by which of the following methods?

1. The firmware stored in a ROM
2. The software in the CDS computer
3. The firmware stored in the RAM
4. The software stored in the RAM

11-63. The buffer memory in the disk memory set's computer is used for which of the following functions?

1. To prevent data from being read from the disk during a write operation
2. To prevent data from being written on the disk during a read operation
3. To prevent the loss of data when reading or writing
4. To hold the external function from the computer

11-64. A disk memory set is capable of reading and writing data on the same disk at the same time.

1. True
2. False

11-65. A single disk memory set controller is capable of controlling a total of how many drives?

1. One
2. Two
3. Three
4. Four

11-66. In a disk memory set's controller to disk drive interface, each drive is connected to the controller by which of the following means?

1. A daisy chained A cable only
2. A daisy chained B cable only
3. Both a daisy chained A and a daisy chained B cable
4. A daisy chained A cable and a unique B cable

11-67. The A cable in a disk memory set's controller to drive interface is used for which of the following functions?

1. Interrupt signal processing only
2. Send timing signals for read/write operations only
3. Microprocessor control of the drives
4. Data interface between the drive and controller

11-68. In a disk memory set, converting 16-bit parallel data into a serial NRZ pulse train is a function of which of the following areas?

1. Controller microprocessor
2. Controller buffer memory
3. Data bus control unit
4. Disk control logic

11-69. In a disk memory set, the data bus control unit gives the highest priority to which of the following transfer requests?

1. Disk control logic and buffer memory
2. Processor input and output holding register
3. Input/output channel
4. Computer generated input data

11-70. In a disk memory set, data is written on the disk using which of the following encoding methods?

1. Phase encoding
2. Non-return-to-zero
3. Non-return-to-zero-indiscrete
4. Modified frequency modulation

11-71. Which of the following speeds is the minimum speed required for the heads of a disk memory set to load?

1. 3,000 rpm
2. 3,100 rpm
3. 3,200 rpm
4. 3,600 rpm

11-72. In a disk memory set, if the disk drive motor's speed drops below 3,100, which of the following events will occur?

1. The heads will crash into the disk
2. The heads will automatically unload or retract
3. The disk memory set will automatically turn off power
4. The disk memory set will continue to operate normally

11-73. The speed of the drive motor in a disk memory set is sensed by which of the following devices?

1. A tachometer
2. A magnetic switch
3. An optical switch
4. A laser switch

11-74. The static ground spring mounted on the lower end of the spindle assembly serves which of the following functions?

1. Protects the disk from a buildup of static electricity
2. Provides power to the spindle
3. Maintains proper pressure of the spindle and the disk
4. Provides a static charge to the spindle

11-75. Which of the following assemblies are NOT part of the actuator assembly?

1. Carriage and voice coil assembly
2. Rail bracket assembly
3. Head/arm assemblies
4. Magnet assembly